

**REMARKS**

The present invention relates to a process and an apparatus for manufacturing an electret article.

In the non-final Office Action of November 10, 2010, it is appreciated that the Examiner has withdrawn the earlier rejections under 35 U.S.C. § 112 and 35 U.S.C. § 103.

However, a new ground of rejection under 35 U.S.C. § 103(a) has been made based on the previously-cited Angadjivand reference in view of newly-cited U.S. 2002/0048770 (Morozov). The reasons for reliance on the Angadjivand reference, as explained at pages 3 - 4 of the Office Action, are similar to the earlier reasons for reliance upon the Angadjivand reference, but the Examiner recognized that Angadjivand describes the spraying of “a vapor of polar liquids such as steam, an atomized spray or mist of fine polar liquid droplets”, and that Angadjivand does not disclose an average diameter of the droplets being less than 20 microns. However, the Examiner cited the Morozov reference, and particularly paragraphs [0005] - [0007] thereof, for disclosure of small charged droplets of less than 20 microns (at pages 5 - 6), and the Examiner asserted that

“One of ordinary skill in the art would have been motivated to modify the process of Angadjivand by using the electrospray method *in order to regulate the form of the deposit* with the added flexibility of changing the travel path and speed of the sprayed material, as suggest by Morozov.” (emphasis added)

In the present Amendment, Applicant has amended claim 3 to improve the correspondence between the verbal and formula expressions. That is, since the formula  $(W_p/W_f) \times 100$  refers to the amount of droplets/amount of melt-extruded thermoplastic resin, it would be

more consistent to refer thereto as the droplet to resin percentage, and claim 3 has been thus amended. Bases therefor is found, e. g., in the formula in original claim 3, and in the specification at page 11. The Examiner is invited to contact the undersigned attorney if the Examiner considers that any further discussion thereof would be helpful.

Turning to the sole rejection, the assertion of obviousness of claims 1 and 3 - 10 based on Angadjivand in view of the newly-cited Morozov reference, Applicant must respectfully traverse. As the Examiner has previously indicated, the Angadjivand reference does relate to the same general subject matter area as the present invention, in being directed to a method and apparatus for making a non-woven fiber electret web. Equally, the Examiner has recognized that the Angadjivand reference is deficient with respect to the process in accordance with present independent claim 1, which was earlier amended to specify the average diameter of the droplets being less than 20  $\mu\text{m}$ , and defining that in accordance with the process the fibers are not wetted upon passing through the mist space.

The Examiner's recognition of patentability *vis-à-vis* the Angadjivand reference is appreciated.

In the Office Action of November 10, 2010, the Examiner has now raised the question, though, as to whether one of ordinary skill in art would be lead to modify the process of Angadjivand by using the electrospray method disclosed by Morozov. The Examiner has posed an obviousness rejection under 35 U.S.C. § 103(a) based on the Examiner's apparent impression (first full paragraph at page 6) that one of ordinary skill in the art would have been motivated to modify the process of Angadjivand by using the electrospray method "in order to regulate the form of deposit" with the added flexibility of changing the travel and path and speed of the sprayed material.

When the teachings of the Morozov reference are actually examined *vis-à-vis* the subject matter area of the present invention, it must be concluded that there is no basis for modifying Angadjivand in view of Morozov to reach the presently claimed invention.

The Morozov reference is clearly seen to be directed to deposition of biological molecules (e.g., proteins and DNA) to form a shape or pattern thereof on a substrate surface and to rapid drying to form a dry deposit of the biologic substance on the substrate.

The foregoing is very different from the present invention and even from the Angadjivand reference. In the case of the present invention, present claim 1 specifies that the mist space is substantially formed from droplets of a polar liquid, and there is no biological material (or other material) contained therein that is being deposited. The Angadjivand reference describes the use of gaseous stream to treat an electret from dye orifices 22 and 24 (see column 6, etc.) and also does not describe any “deposition” process.

Accordingly, the Examiner’s argument at page 6 of the Office Action of a motivation to modify Angadjivand “in order to regulate the form of the deposit” is factually in error, and no such motivation to modify Angadjivand in view of Morozov exists.

Accordingly, Applicant respectfully submits that a *prima facie* case of obviousness has not been established based on the asserted combination of Angadjivand and Morozov, and the rejection based thereon should be withdrawn.

That is, when the subject matters of the primary reference (Angadjivand) and the secondary reference (Morozov) are examined, since the person skilled in the art of electret preparation following the teachings of Angadjivand is concerned with charging fibers of a non- conductive polymeric material, and is not trying to deposit a biologic (or other) material on a substrate, there is no reason to modify Angadjivand based on Morozov. Furthermore, Morozov

describes that the substrate materials thereof to which the deposit is being made preferably have a high conductivity, in sharp contrast to the electret fiber material being treated in the Angadjivand reference. Thus, from any reasonable viewpoint, there is no reason for modifying Angadjivand in view of Morozov to reach the present claimed invention.

In view of the foregoing, Applicant respectfully submits that the sole rejection should be withdrawn, and claims 1 and 3 - 10 should be allowed forthwith.

Applicant further submits that other features as recited in some of the dependent claims establish clear additional bases for reaching a determination of patentability over the asserted combination of Angadjivand in view of Morozov.

First, it is noted that claim 3 is directed to a preferred embodiment wherein the droplet to resin percentage of the formula  $(W_p/W_f) \times 100$  is "500 or more". Regarding this preferred embodiment feature, although it was recognized at page 6 of the Office Action that the Angadjivand reference does not expressly disclose the droplet versus fiber content, it was noted in the Office Action that Angadjivand discloses that the polar liquid is sprayed on the fibers in quantities sufficient to constitute an "effective amount".

Applicant respectfully submits that this asserted "effective amount" is not a teaching that would lead to the subject matter of claim 3, but is really nothing more than a broad invitation to experiment by the Examiner, and is not a disclosure which renders obvious the value of "500 or more" specified in claim 3. Therefore, for this reason additionally, claim 3 is non-obvious and patentable over the asserted combination of Angadjivand in view of Morozov.

With respect to claim 6, the Examiner has not made a separate explanation of the rejection thereof. Rather, the Office Action refers at page 7 to "claim 5 - 6" and the Examiner noted that Angadjivand discloses "nonconductive" means possessing a volume resistivity of

about “10.sup. 14.ohm.cm or greater” at room temperature. Applicant must note that the Office Action does not address claim 6, and that claim 6 requires a volume specific resistivity that is two orders of magnitude higher than the value disclosed in Angadjivand. The mere expression “or greater” in Angadjivand cannot be taken as a teaching indicating that Angadjivand teaches or suggests or enables reaching a particular volume specific resistivity of the thermoplastic resin of  $10^{16} \Omega\text{cm}$  or higher. Accordingly, Applicant respectfully submits that claim 6 is additionally patentable in view of the volume specific resistivity specified therein.

Also, although the Examiner has made some specific comments with respect to other claims and what the Examiner considers to be corresponding features thereof described in the Angadjivand reference, the Examiner has not explicitly addressed present claim 8, which specifically limits the electrical-chargeability enhancing agent contained in the thermoplastic resin fibers to the specific Markush group recited in claim 8. Therefore, for this additional reason, a *prima facie* case for obviousness of claim 8 has not been established.

In view of the foregoing, and particularly in view of the fundamental failure of the asserted combination and the lack of any real reason (other than hindsight) to modify Angadjivand in view of the Morozov reference, Applicant respectfully submits that the sole rejection under 35 U.S.C. § 103(a) should now be withdrawn, and that claims 1 and 3 - 10 hereinabove should be allowed forthwith.

In view of the above, reconsideration and allowance of claims 1 and 3 - 10 of this application are now believed to be in order, and such actions are hereby earnestly solicited.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the local Washington, D.C. telephone number listed below.

AMENDMENT UNDER 37 C.F.R. § 1.111  
Appln. No.: 10/501,265

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**23373**

CUSTOMER NUMBER

Date: April 8, 2011

Respectfully submitted,

A handwritten signature in cursive script, reading "Joseph J. Ruch, Jr.", written over a horizontal line.

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